

TITLE: Observing system variations effect on reanalyses PRESENTATION TYPE:  
Assigned by Committee (Oral or Poster)

CURRENT SECTION/FOCUS GROUP: Hydrology (H) CURRENT SESSION: H21. Understanding  
and Predicting Water and Energy Cycle Changes Utilizing Multi-sensor  
Heterogeneous Data for Energy and Water Cycle Research

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#### ABSTRACT

Reanalyses integrate multitudes of satellite and conventional observations using data assimilation and numerical weather prediction. The result is that many disparate observation platforms, discontinuous in space and time, lead to complete and consistent representations of the state of the weather. The model component also provides physical fields rarely or never observed. However, the numerical model bias is continuously being corrected by the observational analysis, and this bias changes as variations in the observations occur.

NASA's Modern Era Retrospective-analysis for Research and Applications (MERRA) sensitivity to variations in the observing systems are explored. Specifically, we will evaluate the water budget and transport processes as they relate to the advent of SSM/I and AMSU-A radiance assimilation, and an additional case of radiosonde station that exhibits a dramatic shift in mean water states. The MERRA input observation data, now available online, is used to explore these variations.

<http://gmao.gsfc.nasa.gov/merra/>

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